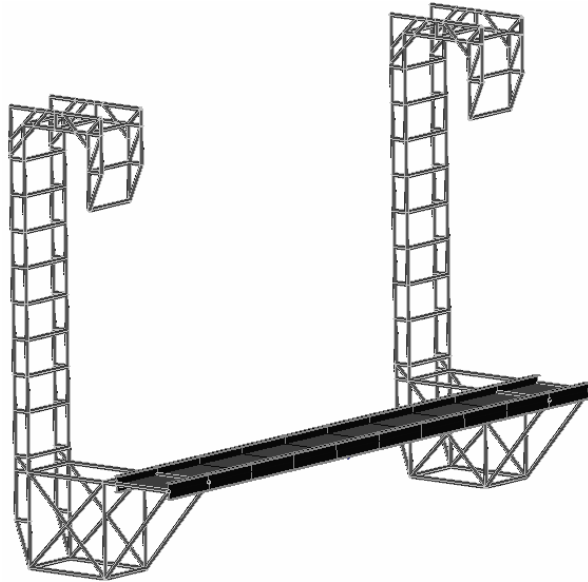




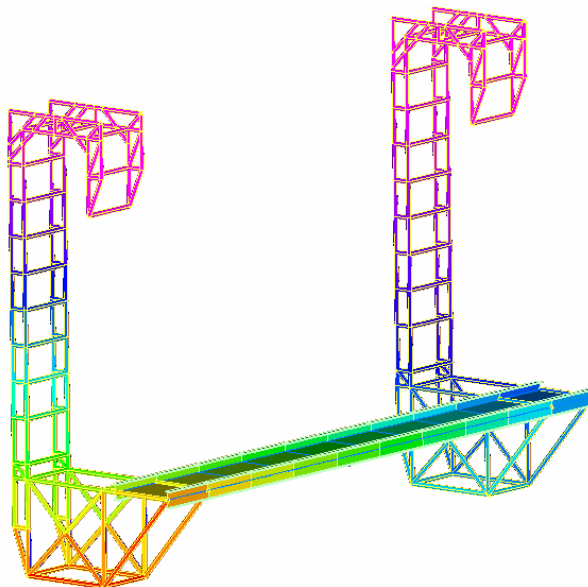
## Civil Case Study (J. C. Banks Construction, LLC – Bridge Maintenance Frame)



Julio C. Banks from J. C. Banks Construction LLC worked on a bridge maintenance frame project for a client with the objective of reducing the lateral deflection of the frame from 7" to 3/4".

This study was required to understand the structural adequacy of a mobile frame and catwalk designed to be used for bridge maintenance and repair by a crew of maximum two occupants. Its design needed to meet Occupational Safety and Health Administration (OSHA) requirements.

In order to effectively ensure these requirements, Julio C. Banks used NEi Nastran to run a structural analysis. The mesh consisted of plate and beam elements for the walking surfaces and tubular elements for the supporting structure. A steady-state gravity load was applied, in accordance with OSHA requirements, to represent the weight of the occupants. Lastly, fixed constraints were placed on the supporting structure to represent real world conditions.



The model was analyzed with the objective of reducing the lateral deflection of the frame from 7" to 3/4". By using the NEi Nastran FEA software, Julio was able to adjust localized structural properties to produce reactions at the supports, as well as beam and plate stresses and deflections. With these tools in hand, both the customer's and OSHA's specifications were met before any prototypes had to be manufactured.

Having used the software for over 14 years, Julio believes that "NEi Nastran is a truly reliable software allowing him to make a commitment to his consulting client and deliver without any delays."

**NEi Software, Inc.** is aggressively focused on commitment to the customer. Detailed documentation, customized on-site training, and comprehensive technical support ensures that you will see immediate return on your investment.

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